Quality Assurance Guidelines
For Projects in
Texas State Agencies

Process for Post Project Reviews

V1.0 Initial Release
2/1/00

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1. PURPOSE OF THE PROCESS

The Post Project Review process consists of activities performed by a project team at the end of the project's life cycle (or at the end of significant phases of work) to gather information on what worked well and what did not, so that future projects can benefit from that learning. This process might also be used some time after the project has finished, if the organization deems it useful. This process may be called by other names such as Lessons Learned, Project Completion Review, and Project Postmortem. In addition, please refer to the Quality Assurance Review Guide for information on the Post-Implementation Evaluation Review (PIER). This review has both a different purpose and a different audience from what is described here.

2. SCOPE OF THE PROCESS

Post Project Reviews are generally done at the end of any significant project or portion of a project. A project that runs longer than a year may conduct Post Phase Reviews at the each of each significant phase, for example, so that lessons are captured while they are still easily recalled. This process might be used with a project that completed some time ago, but for which the lessons were not gathered. For further guidance on tailoring a process based on project characteristics, see *Tailoring the Guidelines* elsewhere in this manual.

2.1 ACTIVITIES TAILORING

Activity	Low QA Focus	Medium QA Focus	High QA Focus
Define the Process to Use	Use small team discussion of those involved	Follow the process described here at the end of the project	Follow the process described here at the end of each phase of the project
Build Data Gathering Instruments	Use a simple project summary form	Use the short form for data gathering	Use the long form for data gathering, tailored to the phase
Gather Information	Include just the team	Include all project participants	Include all project participants and stakeholders
Conduct Post Project Review Session	Hold an informal discussion	Conduct a facilitated review session	Conduct a facilitated review session at each phase

Activity	Low QA Focus	Medium QA Focus	High QA Focus
Distribute Lessons Learned	Update the minimal set of factors, based on this project's experience	Follow the process described here at the end of the project	Follow the process described here at the end of each phase of the project

2.2 ROLES TAILORING

Role	Low QA Focus	Medium QA Focus	High QA Focus
Moderator	Likely to be Project Manager	Process Improvement Team representative	May be Process Improvement Team representative, QA engineer, or other non-project person
Meeting Participants	Project team	Project team, selected stakeholders	Project team, representatives from all stakeholders
Scribe	Project Manager	Project team member	May be Process Improvement Team representative, QA engineer, or project team member

2.3 DELIVERABLES TAILORING

Activity Deliverable	Low QA Focus	Medium QA Focus	High QA Focus
Review Approach	One sentence description in project plan	Describe in project plan	Describe in project plan, with WBS and schedule
Surveys	Informal questions in a meeting	Short form questionnaire	Long form questionnaire
Review Summary	Notes from meeting	One or two paragraph overview with specific recommendations	Detailed analysis of findings with recommendations
Lessons Learned	Notes from informal discussions	Short form for data gathering, end of project	Long form for data gathering, end of each phase and end of project
Process Change Requests	May be filed by Process Improvement Team.	Requests filed at end of project	Requests filed at end of each phase

3. ROLES IN THE PROCESS

Those who generally participate in the Post Project Review process are members of the project team, key stakeholders (e.g. Internal Audit, QAT, operational support staff, etc.), and users of the project deliverables or results.

An objective facilitator runs the process. For a software development or deployment project, that might be someone from Quality Assurance or from a Process Group. For other projects, it might be someone from the Quality organization or an external facilitator. The project leader can run the session, if no independent participant is available.

The roles in the Post Project Review are described in the following table.

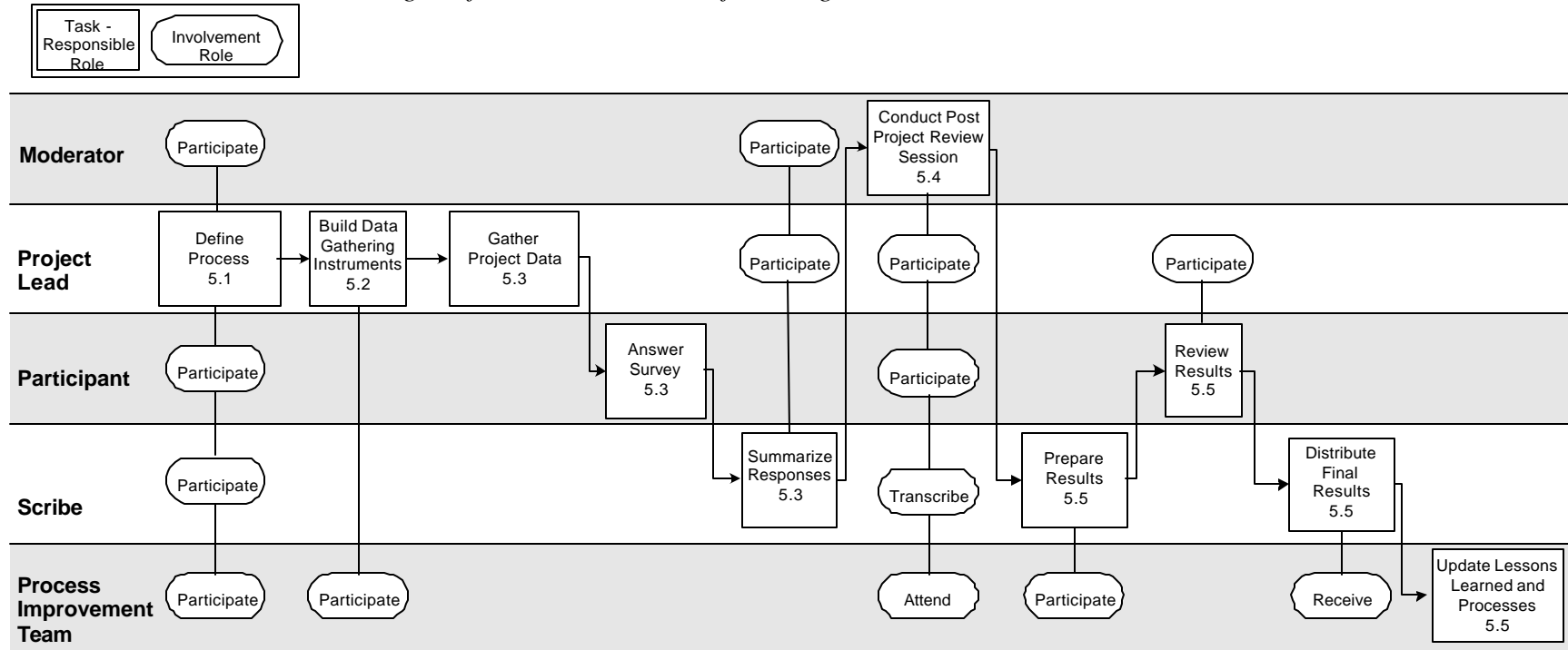| Role Names	Role Definitions
Moderator	One who organizes the sessions and facilitates any meetings
Project Lead	Person who represents the project overall; generally a member of the development organization which performed the project
Participant	One who provides input to the Post Project Review, based on experience with the project or its results
Scribe	One who gathers information from participants and documents the final report of the Post Project Review for this project
Process Improvement Team	One who handles recommendations for changes in Lessons Learned structures and requests for process changes

4. OVERVIEW OF THE PROCESS

The deliverables from this process include items that can be gathered from the tools in use for managing the project, as well as items from the Post Project Review Session. The project estimates of effort, original and final schedules, project budget and actual costs, and staffing profiles are best gathered from the project tracking tools. Any data which exists in a reusable form should be collected from that form, rather than requiring some project team member to generate that.

Those items that benefit from discussion and consensus forming should be the subject of the Post Project Review Session – what went well, when needs to be changed, what risks occurred as problems, what risks to watch for in the future.

The diagram that follows shows the workflow for this process.

Note: The numbers in each rectangle refer to activities in the following section.

Legend: Task - Responsible Role | Involvement Role

Moderator
- Participate
- Participate
- Conduct Post Project Review Session 5.4

Project Lead
- Define Process 5.1
- Build Data Gathering Instruments 5.2
- Gather Project Data 5.3
- Participate
- Participate
- Participate

Participant
- Participate
- Answer Survey 5.3
- Participate
- Review Results 5.5

Scribe
- Participate
- Summarize Responses 5.3
- Transcribe
- Prepare Results 5.5
- Distribute Final Results 5.5

Process Improvement Team
- Participate
- Participate
- Attend
- Participate
- Receive
- Update Lessons Learned and Processes 5.5

Lessons Learned from the Post Project Review should be archived so that it is easy for project team members, process improvement teams, and managers to find useful information. An example of useful structure is a risk factor table (see the Process for Analyzing and Managing Risk",) composed of categories, factors, and cues about risks. This is an example entry in such a table:

Category	Factor	Low Risk Cue	Medium Risk Cue	High Risk Cue
Customer Organization	Working across organizational boundaries	Processes in place to support working across boundaries; evidence of cooperation	Some evidence of cooperation, but no defined processes	No processes and little evidence of cooperation; active hostility

5. ACTIVITY DESCRIPTIONS

The following sections provide details on each activity – a description of the purpose, entry and exit criteria, deliverables, and the sequence of tasks to be done. Tasks are shown along with the roles generally responsible and/or involved in those tasks.

Post Project Review activities are a part of the work breakdown structure of the project, and get scheduled like any other work items.

5.1 DEFINE THE PROCESS TO USE

Purpose: Select and communicate to those involved the approach to be used for this Post Project Review.

Entry Criteria:
- Project work is complete
- A Moderator has been selected
- A review schedule has been prepared

Roles	Tasks
Moderator and Project Lead	Discuss the alternatives for performing the Post Project Review, and select appropriate elements. Potential components include: • kickoff meeting to describe the process • survey for each person to complete; might be tailored from a standard organization format • Post Project Review session to discuss results • report circulated for comment/correction • report archived in process assets library Distribute information about the approach to all involved

Exit Criteria:
- There is agreement on approach.
- All involved have been notified of the next steps

5.2 BUILD DATA GATHERING INSTRUMENTS

Purpose: Identify information to be gathered and structure the instruments

Entry Criteria:
- Project records are complete and accessible
- Participants can be reached through a common medium

Roles	Tasks

Moderator and Project Lead	1. Review the kinds of information generally gathered for projects of this type in this organization in Post Project Reviews
	2. Identify existing sources and data. Items to consider include:
	  • initial budget; final cost
	  • initial staffing estimates, profiles; actual staffing profiles
	  • initial effort estimates; final effort values
	  • initial work product size estimates; final values
	  • initial milestone and schedule; final values
	  • number of requirements changes
	  • rework statistics
	  • product quality targets; actual values
	  • initial risk list; final results of risk management
	  • any other relevant measures of process or product
	3. Review local templates for gathering post-project information from participants (example: survey templates, Appendix B)
	4. Identify information to be gathered from project participants and stakeholders. Candidate items include:
	  • success rating by team, management, customers
	  • key things that were done right on the project
	  • key things that were done wrong and should be changed
	  • risks that were not detected and became problems
	  • risks for which mitigation actions were ineffective
	5. Develop a survey and distribute to participants, with notice of when to complete, to have information included in Post Project Review Session.
	6. Develop a summary form for analyzing the data from the survey

Exit Criteria:
- Sources of project history data identified
- Survey prepared and distributed for participant feedback

5.3 GATHER INFORMATION

Purpose: Collect data for Post Project Review Session and project history database

Entry Criteria: • Summaries are complete and agenda is ready for Post Project Review Session

Roles	Tasks
Moderator	Gather all of the project history data and ensure that it is complete and ready for the organization project history database
Participants	Complete the survey or use the risk management tools to enter personal responses to lessons learned items

Moderator	1. Review the results of all individual responses
	2. Generate a summary report in areas that can be summarized; build lists of those items that require discussion and consensus (things done right, things done wrong, risks missed, etc.)
	3. For any data that appears to be suspect, review with the provider and reach agreement on a resolution (or remove suspect data)
	4. Set agenda for the Post Project Review Session and distribute an announcement of the meeting to all participants. A possible agenda includes:
	  • review of summary information gathered thus far
	  • using results of surveys, facilitated discussion of things done right; group ranking of most important, recommendations for how to ensure they continue to be done in future projects
	  • facilitated discussion of things done wrong; group ranking of most important
	  • brainstorm causes of these problems and how to ensure they don't happen again
	  • review of risk management effectiveness, what was missed; brainstorm factors to include, ways to adapt mitigation
	  • structured discussion of lessons learned, using an organization structure, such as a risk factor table or another lessons learned taxonomy, to identify lessons to add
	  • collect any other comments participants want recorded

Exit Criteria: • All participants have provided individual input
• Agenda for Post Project Review Session has been published

5.4 CONDUCT POST PROJECT REVIEW SESSION

Purpose: Review project results with participants and gather consensus information

Entry Criteria:
- Most participants are able to attend the session
- Summaries of surveys are ready for the session

Roles	Tasks

Moderator	Calls session to order and conducts it according to the agenda. Methods used to facilitate the consensus-building portion of the session include:
	• nominal group technique, starting with the lists gathered from individual participant surveys before the session
	   – ask team about what went right; record that information; ask how to preserve it (if not already in processes) and document that
	   – ask team what went wrong
	   – use voting technique to get team to select top N ideas to improve
	   – for each, ask how to avoid next time; if not already in processes, document that advice
	• facilitated completion of tables using risk management information gathering tools or other Lessons Learned taxonomy
	   – review final project risk list and gather the end of project details for each risk (level of satisfaction, cost of the action, etc.)
	   – elicit from project team any major problems that arose and how they might have been detected as risks early in the cycle; mark those as risks that emerged; if this is a complex project, go through each category to prompt people for ideas

Participants	Describe experiences and provide recommendations for how to improve the work of the project
Scribe	Record all meeting proceedings and capture ranked lists from the discussions

Exit Criteria:
- Participants agree that all key input has been provided

5.5 DOCUMENT RESULTS FROM SESSION

Purpose: Build the permanent record of lessons learned from this project

Entry Criteria: • Team input is complete

Roles	Tasks
Scribe	• Work with organization process improvement team to consolidate items from the Post Project Review session into a form that fits the organization Lessons Learned collection (may be risk factors or other taxonomy) • Write process change requests to handle changes recommended by the project team • Write report on the results of the team Post Project Review session. • Distribute all results to participants for review.
Participants	• Review draft results and provide feedback to scribe.
Scribe	• Make recommended modifications as appropriate. • Archive results in organization process assets library.
Project Lead	• Ensure useful records from project are placed in project history database • Determine how best to distribute key results of the Post Project Review and use those channels (example: brown bag seminars, presentations to quality councils, presentations at technical seminars)

Exit Criteria: • Participants have reviewed draft results and provided feedback.
• Project history data is archived in an approved location
• Organization structures for handling Lessons Learned have been updated, or updates have been provided to the maintainer

6. MEASURES

Measures that can be used to determine the effectiveness of Post Project Reviews include the following.

Process Change Requests – The measure should include the number of recommended changes, as well as an indication of the level of importance to the project team, any indication of when each change is needed, and recommendations for the content of the change.

Lessons Learned Updates – The measure should include a count of the number of lessons (e.g. risk factors) being added or changed in the organization's collection.

Level of Participation – Measure the participation of the project members and stakeholders in the Post Project Review process, to understand the percent coverage of those who could have constructive input to improving the processes.

7. VERIFICATION ACTIVITIES

The following management verification activities are appropriate for Post Project Reviews:
- Ensure that the project manager and project team are performing Post Project Reviews for all medium and large projects.
- Review the results of the Post Project Reviews, to identify actions needed by management, so that processes and project conditions are continuously improving.

The following verification activities are appropriate for Quality Assurance personnel:
- Assist the project manager in selecting an approach for performing the Post Project Review for a project.
- Participate as a contributor to the data gathering and the Post Project Review Session.
- Ensure that the follow-up activities of updating the Lessons Learned structures are completed and that process improvement requests are filed.

8. DOCUMENT CONTROL

Revision	Date	Description
0.1	11/11/99	First draft; for internal review
0.2	11/19/99	Internal review revisions
0.3	12/8/99	Updated diagram, guidelines, page breaks
1.0	2/1/00	Incorporate Advisory Group revisions

A. ADDITIONAL RESOURCES

Consult the Risk Factor Tables included in the process assets collection. These tables include lessons learned from many software and systems projects over time.

Lessons Learned Bibliography

Busby, J.S. "An Assessment of Post-Project Reviews," *Project Management Journal,* Vol. 30, No. 3, September 1999, pp.23-29.

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Kotnour, Tim. "A Learning Framework for Project Management," *Project Management Journal,* Vol. 30, No. 2, June 1999, pp.32-38.

McConnell, Steve. *Software Project Survival Guide*. Redmond, WA: Microsoft Press, 1998, Chapter 18.

Stephens, Carol H, Jeff Kasher, Amber Welsh, and Josh Plaskoff. "How to Transfer Innovations, Solutions, and Lessons Learned across Product Teams: Implementation of a Knowledge Management System," *Proceedings of the 30th Annual Project Management Institute 1999 Seminars & Symposium,* CD version.

Terrell, Michael S. "Implementing a Lessons Learned Process That Works," *Proceedings of the 30th Annual Project Management Institute 1999 Seminars & Symposium,* CD version.

Williams, Denny. "Creating High Performance Teams Through Effective Knowledge Management," *Proceedings of the 30th Annual Project Management Institute 1999 Seminars & Symposium,* CD version.

B. SUPPORTING TEMPLATES

Please see the following items, accessible separately:
- **Post Project Review Questionnaire Annotated Template – Short –** short set of questions that might be tailored into a survey for participants to complete before a Post Project Review Session
- **Post Project Review Questionnaire Annotated Template – Long** – full set of questions that might be tailored into a survey for participants to complete before a Post Project Review Session
- Risk Factor Tables – collections of risk factors for given types of projects, organized in categories, with cues to help identify risks to a project; these should be extended with lessons learned on organization projects

C. SUPPORTING CHECKLISTS

Please see the following checklists, accessible separately:
- **Post Project Review Preparation Checklist** – items to consider when checking that a project team has a good plan for a Post Project Review
- **Post Project Review Completion Checklist** – items to consider when checking that a project team has conducted a useful Post Project Review and has completed processing of the information gathered